

DISCUSSION OF THE CLAIMS

Claims 1, 18-26 and 28-33 are active in the present application. Independent Claim 1 is amended to recite a first infrared reflective layer that is in direct contact with the first absorbent layer. Support for the amendment is found in the examples where a first infrared reflective layer is deposited directly on an absorbent layer. Claim 33 is a new claim. Support for new Claim 33 is found in the examples.

No new matter is added.

REMARKS

Present independent Claim 1 is drawn to a transparent substrate having a stack of layers. A first infrared reflective layer of the stack of layers recited in Claim 1 must be in direct contact with a first absorbent layer. Applicants draw the Office's attention to new dependent Claim 33 in which a last infrared reflective layer is in direct contact with a last absorbent layer. It is now explicit in the presently claimed invention that there are no layers present between the first absorbent layer and the first infrared reflective layer and the last infrared reflective layer and last absorbent layer.

The Office appears to take the position that the Coustet (US 2005/0123772) reference discloses a stack of layers in which an absorbent layer is "inserted between two layers of dielectric of at least one of the said coatings" (see page 3 of the May 11, 2009 Office Action). The Office cites to paragraph [0028] of Coustet as evidence that the functional layers of the Coustet material are not necessarily sandwiched between dielectric layers. Applicants draw the Office's attention to paragraph [0017] of Coustet which describes the absorbent layer of the cited art (emphasis added):

The absorbent layer (or the absorbent layers, the invention not being limited to the insertion of a single absorbent layer) may be chosen to be made of various materials: it may be a metal or a metal alloy of the Ti, Nb, Zr or NiCr type.

The above-quoted disclosure of Coustet makes it clear that multiple absorbent layers may be used in addition to single absorbent layers. The layers to which Coustet refers are those layers which are sandwiched between dielectric layers not the infrared reflective layers recited in the present claims.

In fact, Coustet makes it clear that the absorbent layer should not be in contact with a silver layer or else the silver layer will undergo deterioration. For example:

This is because if the absorbent layer is in contact with the glass, or with the silver, it will, under the effect of heat, have a

tendency to be oxidized, to deteriorate or to cause the adjacent layers to deteriorate in a more or less controllable manner. Thus, if the absorbent layer is in direct contact with the silver layer, it tends to destabilize it by oxidizing. If it is in contact with the glass, the layer will be modified by the diffusion of alkali metal ions coming from the glass.

See paragraph [0009] of Coustet (emphasis added).

This is further in agreement with paragraph [0013] of Coustet where it is disclosed that at least one absorbent layer is inserted “between two layers of dielectric”. Paragraph [0013] teaches away from directly contacting an absorbent layer with a silver layer:

In this configuration, the absorbent layer is neither in direct contact with the glass (thereby limiting the problems of oxygen and alkali metal diffusion under the effect of heat) nor in direct contact with the silver, thereby limiting the problems of deterioration of the silver layer caused by oxidation of the absorbent layer in contact with it, also under the effect of heat).

Applicants submit that the art relied on by the Office is contradictory to the presently claimed invention which requires that both first and last infrared reflective layers are in direct contact with absorbent layers.

Further still, in paragraph [0020] of Coustet again emphasizes the importance of separating absorbent and silver layers “in order to isolate it from interactions with species running the risk of oxidizing it or degrading it”. Thus, Coustet teaches that it is advantageous to separate the absorbent layer from other layers such as a silver layer. This teaching runs contrary to the Office’s assertion that Coustet suggests embodiments in which a silver layer, e.g., an infrared reflective layer, is in direct contact with an absorbent layer in the manner presently claimed.

Paragraph [0091] of Coustet describes a comparative example in which a layer is placed in direct contact with glass. Comparative Example 7 shows an absorbent layer directly on glass. Coustet describes the result as “disastrous”.

For the reasons discussed above in detail, Applicants submit that the presently pending claims are not obvious over the cited art and respectfully request withdrawal of the rejection.

Respectfully submitted,

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